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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/707,044	11/06/2000	Patrick D. Lincoln	SRI/4273-2	8431

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MOSER, PATTERSON & SHERIDAN, LLP
SRI INTERNATIONAL
595 SHREWSBURY AVENUE
SUITE 100
SHREWSBURY, NJ 07702

EXAMINER
REKSTAD, ERICK J

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/707,044	LINCOLN ET AL.	
	Examiner	Art Unit	
	Erick Rekstad	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11,14,15,25-28,32-38,40 and 43-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9, 11, 14, 15, 25-28, 32-38, 40 and 43-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is a Final Rejection for application no. 09/707,044 in response to the amendment filed on July 25, 2005 where in claims 1-9, 11, 14, 15, 25-28, 32-38, 40 and 43-45 are presented for examination.

Response to Arguments

Applicant's arguments filed July 25, 2005 have been fully considered but they are not persuasive.

In regards to the applicant's arguments related to the claims, the applicant argues that Suzuki fails to disclose or suggest "the novel invention of encoding each component of a video image sequence in accordance with a plurality of dimensions to form a plurality of bitstreams, such that the plurality of bitstreams forms a partial order having a common bitstream as its base". To clarify the Examiner's position an explanation of the second embodiment of Suzuki will be explained in reference to Figure 12. As shown in the previous rejection, Suzuki teaches the prior art of dividing a frame into objects as used in MPEG4 (Col 7 Lines 42-50, Col 8 Line 6- Col 9 Line 8, Figs. 20, 22). Suzuki further teaches the need to provide a means to efficiently encode object based encoding means with the ability to have scalability (Col 9 Lines 59-65 and Col 10 Lines 19-48, and Col 11 Lines 22-34). As one can see in Figure 22, an image is divided into components (101), each component is then provided into a plurality of dimensions (102 and 103). Suzuki further teaches multiple bitstreams for an object (Col 13 Lines 62-67 and Col 14 Lines 35-39, Figs. 30 and 31). Now in reference to Figure 12, Suzuki transports the multiplexed stream (FS), which contains all the bitstreams for all the

objects, to a user where the user selects a desired quality (REQ). This requested quality (REQ) is used by the syntax analysis circuit (206), along with the object descriptor (OD), to determine which bitstreams to decode (Col 20 Line 63-Col 21 Line 58). Suzuki teaches the object descriptor contains an identifier for noting other bitstreams which the desired bitstream depends from (Col 21 Lines 59-62, Col 22 Lines 43-59). The required bitstream is defined using an ID (ES_Number) (Col 22 Lines 6-14). Note that for the image comprising Figures 30 and 31, if the user desires an image with the Enhancement Layers a dependence on the Base Layers would be formed in the OD, thus defining a base bitstream as required by the claims.

Claim Rejections - 35 USC § 103

Claims 1-7, 11, 14, 15, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,567,427 to Suzuki et al.

[claims 1, 5, 25]

As shown in Figure 22, Suzuki teaches the method and apparatus for deconstructing video into components (objects) in accordance with the MPEG4 standard (Col 8 Line 21-Col 9 Line 8, Figs. 20 and 22).

Suzuki further shows in Figure 17, the encoding using a plurality of dimensions (spatial scalability, Col 5 Lines 25-32) where each dimension represents a characteristic of the video image sequence (Col 5 Lines 23-67, Fig. 17).

As required by claim 5, Suzuki teaches the encoding of the components into a plurality of bitstreams as shown in Figures 22, 30 and 31 (Col 13 Lines 62-67 and Col 14 Lines 35-39).

Suzuki suggests the combination of the encoding of the components and the dimensions (Col 10 Line 19-Col 11 Line 34, Figs. 26-31). Suzuki further teaches the decoding of a video stream encoded using the combination of components and the dimensions (Col 20 Line 63-Col 21 Line 65, Fig. 12). As noted in the citation, the decoder is provided a multiplexed bitstream containing all the bitstreams for the different dimensions for each component. Suzuki further teaches the use of an object descriptor (OD) which defines the required bitstreams to decode an image at a desired level (Col 21 Lines 59-65 and Col 22 Lines 6-14). This requirement for lower level bitstreams is viewed by the examiner to define a base bitstream, as shown by the Figures 30 and 31 the base bitstream would be the base layer for background and the foreground. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the encoding of the components and the dimensions as suggested by Suzuki in order to use the decoder of Suzuki.

[claims 2, 11, 14 and 15]

As shown above for claim 1, Suzuki teaches the encoding comprising the steps of forming a base bitstream and forming additional bitstreams (Col 10 Line 19-Col 11 Line 3, Figures 26-31). As required by claims 14 and 15, Suzuki teaches the base bitstream represents a first video image sequence having minimal quality and when combined with an additional layer the video image sequences has a higher quality (Col 5 Lines 23-32, Col 10 Lines 64-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the scalability encoding process of Suzuki in order to provide video at different qualities (Col 10 Lines 41-48).

[claim 3]

Suzuki teaches the plurality of dimensions comprising at least one of specific image regions, frame rate, resolution, and color depth (Col 5 Lines 23-32, Col 10 Lines 43-48, Figs 26-31). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the dimensions of Suzuki in order to provide video at different qualities (Col 10, Lines 41-48).

[claim 4]

Suzuki teaches the method of claim 1 wherein the dimensions are arranged in a partial order, where each point in the partial order represents a valid combination of dimensions for encoding the video image sequence (Col 10 Lines 63-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the dimensions of Suzuki in order to provide video at different qualities (Col 10, Lines 41-48).

[claims 6 and 26]

As shown in Figures 30 and 31, the background and foreground are encoded orthogonal relative to each other (Col 14 Lines 35-39). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the components of Suzuki in order to satisfy the encoding standards of MPEG4 (Col 7 Lines 43-50 and Col 8 Lines 21-33).

[claim 7]

Suzuki teaches the use of the encoding system for transmitting a motion picture signal to a remote location (Col 1 Lines 12-35, Col 11 Line 58-Col 12 Line 3, Fig. 1). It

would have been obvious to one of ordinary skill in the art at the time of the invention that the encoder of Suzuki is performed at the edge of a network as taught by Suzuki.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claim 1 above, and further in view of US Patent 5,621,660 to Chaddha et al.

[claims 8 and 9]

Suzuki teaches the connection of the encoder to a network as shown above for claim 7 (Col 1 Lines 12-44). As shown in Figure 1, the encoder is separated from the decoder by the network. Suzuki does not specifically teach the method performed at an intermediate node within a network. Chaddha teaches a similar system where in the encoder (60) and decoder (40) are separated by a network (Fig. 1). Chaddha further teaches the server receiving the video from a video source (10 of Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention that server of Chaddha (20 Fig. 1) is also an intermediate node in the network of Figure 1. It would have been obvious to one of ordinary skill in the art to use the system of Chaddha (Fig. 1) to implement the network of Suzuki (Fig. 1) in order to connect the encoder and decoder to a network such as the internet.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claim 25 above, and further in view of US Patent 5,063,603 to Burt.

[claim 27]

As shown above, Suzuki teaches the apparatus of claim 25. Suzuki teaches the video can be divided into a plurality of subimages (Col 7 Lines 45-50). Suzuki further

teaches an example of dividing the video into the background and foreground (Col 7 line59-Col 8 Line 20, Figs. 20 and 21). Suzuki does not teach the dividing of the video into the background, foreground, and moving objects as required by claim 27.

Burt teaches the method of dividing a video into foreground, background and moving objects. Burt further teaches sending the objects to a multi-resolution pyramid processor (Col 7 Lines 8-34 and 50-67, Col 8 Lines 1-21, Figs 1 and 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the video encoding system of Suzuki with the object detector of Burt in order to divide the video into a plurality of subimages as required by Suzuki.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claim 25 in view of US Patent 6,477,201 to Wine et al.

[claim 28]

Suzuki teaches the apparatus of claims 25. Suzuki further teaches the adjusting of the frame rate and spatial resolution for the layers in scalable encoding process of the encoder (Col 10 Lines 46-48). Suzuki does not teach dividing the video into the dimensions comprising color depth. Wine teaches the use of adjusting the parameters that define the resolution and color depth for a specific image region based on that region's importance (Col 1 Lines 56-67, Col 2 Lines 4-10, Col 3 Lines 53-67, Col 4 Lines 1-17). It would have been obvious to one skilled in the art at the time of the invention to combine the additional parameters of Wine to the system of Suzuki in order to provide the ability to adjust the image quality of image regions based on the region's importance.

Claims 32-38, 40, and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of US Patent 6,233,356 to Haskell et al.

[claims 32 and 36]

As shown in Figure 22, Suzuki teaches the method and apparatus for deconstructing video into components (objects) in accordance with the MPEG4 standard (Col 8 Line 21-Col 9 Line 8, Figs. 20 and 22).

Suzuki further shows in Figure 17, the encoding using a plurality of dimensions (spatial scalability, Col 5 Lines 25-32) where each dimension represents a characteristic of the video image sequence (Col 5 Lines 23-67, Fig. 17).

As required by claim 36, Suzuki teaches the encoding of the components into a plurality of bitstreams as shown in Figures 22, 30 and 31 (Col 13 Lines 62-67 and Col 14 Lines 35-39).

Suzuki suggests the combination of the encoding of the components and the dimensions (Col 10 Line 19-Col 11 Line 34, Figs. 26-31). Suzuki further teaches the decoding of a video stream encoded using the combination of components and the dimensions (Col 20 Line 63-Col 21 Line 65, Fig. 12). As noted in the citation, the decoder is provided a multiplexed bitstream containing all the bitstreams for the different dimensions for each component. Suzuki further teaches the use of an object descriptor (OD) which defines the required bitstreams to decode an image at a desired level (Col 21 Lines 59-65 and Col 22 Lines 6-14). This requirement for lower level bitstreams is viewed by the examiner to define a base bitstream, as shown by the Figures 30 and 31 the base bitstream would be the base layer for background and the foreground. It

would have been obvious to one of ordinary skill in the art at the time of the invention to combine the encoding of the components and the dimensions as suggested by Suzuki in order to use the decoder of Suzuki.

Suzuki further teaches the processing can be implemented in software program and transmitted to users over a network (Col 22 Lines 15-23). Suzuki does not teach the use of a general purpose computers operating as network nodes.

Haskell teaches the use of program instructions to perform the encoding on a microprocessor (Col 4 Lines 13-16, Col 11 and Col 12, Fig. 3). Haskell further teaches the connection of the encoder to a network, a specific example being a computer network (Col 4 Lines 3-6). Therefore the microprocessor is a node on the network as required by claim 32.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the encoding process of Suzuki with the microprocessor of Haskell in order to perform the encoding on a computer network.

[claims 33, 40, and 43-45]

As shown above for claim 32, Suzuki teaches the encoding comprising the steps of forming a base bitstream and forming additional bitstreams (Col 10 Line 19-Col 11 Line 3, Figures 26-31). As required by claims 44 and 45, Suzuki teaches the base bitstream represents a first video image sequence having minimal quality and when combined with an additional layer the video image sequences has a higher quality (Col 5 Lines 23-32, Col 10 Lines 64-67). It would have been obvious to one of ordinary skill

in the art at the time of the invention to use the scalability encoding process of Suzuki in order to provide video at different qualities (Col 10 Lines 41-48).

[claim 34]

Suzuki teaches the plurality of dimensions comprising at least one of specific image regions, frame rate, resolution, and color depth (Col 5 Lines 23-32, Col 10 Lines 43-48, Figs 26-31). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the dimensions of Suzuki in order to provide video at different qualities (Col 10, Lines 41-48).

[claim 35]

Suzuki further teaches the dimensions are arranged in a partial order, where each point in the partial order represents a valid combination of dimensions for encoding the video image sequence (Col 10 Lines 63-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the dimensions of Suzuki in order to provide video at different qualities (Col 10, Lines 41-48).

[claim 37]

As shown in Figures 30 and 31, the background and foreground are encoded orthogonal relative to each other (Col 14 Lines 35-39). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the components of Suzuki in order to satisfy the encoding standards of MPEG4 (Col 7 Lines 43-50 and Col 8 Lines 21-33).

[claim 38]

Suzuki teaches the use of the encoding system for transmitting a motion picture signal to a remote location (Col 1 Lines 12-35, Col 11 Line 58-Col 12 Line 3, Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention that the encoder of Suzuki is performed at the edge of a network as taught by Suzuki.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Rekstad whose telephone number is 571-272-7338. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erick Rekstad
Examiner
AU 2613

GIMS PHILIPPE
PRIMARY EXAMINER

(571) 272-7338
erick.rekstad@uspto.gov